

No. 102 of 2010

**VIRGIN ISLANDS**  
**TELECOMMUNICATIONS CODE (PART 3) (QUALITY OF SERVICE)**  
**REQUIREMENTS, 2010**

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**VIRGIN ISLANDS**  
**STATUTORY INSTRUMENT 2010 No. 102**  
**TELECOMMUNICATIONS ACT, 2006**  
**(No. 10 of 2006)**

**TELECOMMUNICATIONS CODE (PART 3) (QUALITY OF SERVICE)**  
**REQUIREMENTS, 2010**

[Gazetted 6<sup>th</sup> January, 2011]

The Telecommunications Regulatory Commission, in exercise of the power conferred by sections 6 (p) and 91 (3) of the Telecommunications Act, 2006 (No. 10 of 2006), issues these Requirements.

**PART I**

**GENERAL PROVISIONS**

Citation and commencement.

**1.** These Requirements may be cited as the Telecommunications Code (Part 3) (Quality of Service) Requirements, 2010 and shall come into force on the date of publication in the Gazette.

Interpretation.

**2.** In these Requirements, unless the context otherwise requires,

No. 10 of 2006.

“Act” means the Telecommunications Act, 2006;

“billing” means the administrative function to prepare bills to service customers, to prompt payments, to obtain revenues and to take care of customer reclaims;

“call set-up time” means the period starting when the address information required for setting up a call is received by the network (recognised on the calling user’s access line) and finishing when the called party busy tone, or ringing tone or answer signal is received by the calling party;

“complaint” means a statement by a user expressing dissatisfaction due to a gap between the expected and the delivered benefits from the use of a service;

“coverage map” means a graphical representation of the areas in which a service is offered, superimposed on a map of the Virgin Islands;

“direct service” means a service where the service provider that provides the telecommunications service also provides the access network or rents an unswitched local loop (unbundled local loop) to use for the provision of the service to the user;

“directory service” means a service to search and retrieve information from a catalogue of well-defined objects, which may contain information about certificates, telephone numbers, access conditions, addresses, etc.;

“dropped call ratio” means the proportion of incoming and outgoing calls which, once they have been correctly established and therefore have an assigned traffic channel, are dropped or interrupted prior to their normal completion by the user;

“fault” means the inability of an item to perform a required function, excluding that inability due to preventive maintenance, lack of external resources or planned actions;

“fault repair time” means the duration from the instant a fault has been notified by the user to the published point of contact of the public supplier to the instant when the service or service element has been restored to normal working order;

“fault report” means a report of disrupted or degraded service that is made by a user and is attributable to the network of the public supplier or any interconnected public network, and that is not found to be invalid;

“indirect service” means a service where the public supplier that provides the public telecommunications service does not provide the access network but is selected by the user using a form of carrier selection;

“internet access service” means a public telecommunications service consisting of providing users with an access to the global Internet;

“measure” means a unit by which a parameter may be expressed;

“parameter” means a quantifiable characteristic of a service with specified scope and boundaries;

“planned disruption of service” means the scheduled or planned interruption of the public telecommunication service by the public supplier;

“public fixed telephone service” means public telephone services other than public mobile telephone services;

“public mobile telephone service” means a public telephone service typically provided to a mobile terminal (i.e., a terminal which can be used while the user is on the move, without being restricted to an area served by one base station);

“public supplier” has the meaning set out in the Act;

“quality of service” means the totality of characteristics of a telecommunications service that bear on its ability to satisfy stated and implied needs of the user of the service;

“quarter” means a period of three months starting on 1 January, 1 April, 1 July and 1 October of the Gregorian calendar each year;

“repair” means the maintenance carried out after fault recognition and intended to restore an item to a state in which it can perform a required function;

“service” means a set of functions offered to a user by a public supplier;

“SMS” means Short Message Service;

“supply time” means the duration from the instant of a valid service order being received by a direct service provider to the instant a working service is made available for use;

“user” has the meaning set out in the Act.

Purpose. **3.** The purpose of these Requirements is to establish a framework for the provision of information to assist users with their selection of services and to assist in the maintenance and the improvement of the quality of services provided by public suppliers.

Scope. **4.** (1) These Requirements apply to a public supplier of any of the following services

- (a) public fixed telephone service;
- (b) public mobile telephone service;
- (c) internet access service.

(2) Notwithstanding subsection (1), sections 1, 2, 3, 4 (3) and (4), 6, 8 (1), 12, 15 to 16, 17 (4) to (6) and 18 apply to all public suppliers.

(3) A public supplier shall no later than thirty days after the end of each quarter notify the Commission of the commercial launch of any services within that quarter.

(4) These Requirements place obligations on public suppliers for measuring and reporting quality of service and allows the Commission to establish and amend, from time-to-time as required, quality of service targets that public suppliers are required to comply with.

Exemptions. **5.** (1) The Commission reserves the right to, on a case-by-case basis, and based on the application of a public supplier, exempt such public supplier from

- (a) the requirement to provide information to the Commission; or
- (b) publishing the quality of service results.

(2) For the purposes of subsection (1), the determination may include, but shall not be limited to, the following factors whether:

- (a) the public supplier is new;
- (b) the public supplier has a small user base; or
- (c) the public supplier only targets a small user base.

(3) An exemption granted in accordance with subsection (1) shall be for a specific duration, to be determined by the Commission.

Quality of service targets.

**6.** The Commission may periodically conduct surveys to assess user perceptions of services and public suppliers and to investigate which, if any, quality of service targets should be imposed. The Commission may impose such targets on all public suppliers providing a specific service or on an individual public supplier as it sees fit.

## **PART II REPORTING**

Parameters.  
Schedule 1  
Schedule 2  
Schedule 3

- 7.** The parameters for reporting quality of service are as follows
- (a) public fixed telephone service in Schedule 1;
  - (b) public mobile telephone service in Schedule 2; and
  - (c) internet access service in Schedule 3.

Reporting of quality of service.

**8.** (1) Before concluding a contract with a user, a public supplier shall make available to that user up-to-date and clear information on its quality of service for the services that the user is seeking.

(2) Notwithstanding subsection (1), the reporting periods over which measurements are made shall be quarterly.

(3) A public supplier shall provide the data as specified in section 7 to the Commission no later than thirty days after the end of the reporting period in the format specified in Schedules 1, 2, and 3. This data should be provided on

paper and by email in Microsoft Excel format to the email address provided by the Commission.

(4) A public supplier shall also provide on a quarterly basis in accordance with subsection (3) coverage maps for each of the services covered by these Requirements as well as calculations of coverage in terms of territory and population. The coverage maps shall

- (a) be shown against an outline map of the Virgin Islands;
- (b) clearly indicate the areas in which each of the services covered in these Requirements are available;
- (c) in the case of a wireless service, the map should indicate the signal strength in dBm (decibels referenced to 1 milliwatt) at the edge of the coverage area.

**9.** (1) A public supplier may, in addition to the parameters set out in these requirements, adopt additional quality of service parameters to determine its quality of service level.

Obligations of public suppliers.

(2) Where a public supplier adopts additional parameters in accordance with subsection (1) and introduces procedures and information systems intended for the treatment of quality of service criteria, it shall provide the Commission with the detailed methodologies of the measurements.

(3) Any notice sent by a public supplier to the Commission pursuant to subsection (2), shall detail all relevant matters including the methods and systems used for their measurements.

**10.** A wholesale service provider who makes available wholesale services which are used as inputs in provision of the services pursuant to section 7 shall provide to their users and the Commission the measured quality of service for such services in accordance with the provisions of sections 8 and 9 to the extent such provisions are applicable.

Obligations of wholesale service providers.

**11.** (1) For each reporting period detailed in section 8 (2) a public supplier shall, no later than thirty days after the end of each reporting period publish on its website

Publication of quality of service information.

- (a) clear and up-to-date information on the quality of service performance levels achieved during the previous reporting period compared with each parameter detailed in the Schedules;
- (b) clear and up-to-date information on the quality of service levels it proposes to provide to customers in the course of the next twelve months; and
- (c) service coverage maps in accordance with section 8(4).

(2) The Commission shall publish on its website all of the data reported by the public suppliers in accordance with sections 7 and 8 including a comparison between different public suppliers.

Record keeping.

**12.** All quality of service data as well as measurements and related records that a public supplier collects shall be retained by the public supplier for a minimum period of twenty four months after the end of the reporting period or until directed otherwise by the Commission.

Supply time.

**13.** (1) Where a public supplier cannot provide a service to a user because

- (a) it is not technically feasible to install the service; or
- (b) the public supplier does not supply the particular service in the requested geographical area;

the public supplier shall include these requests in the quality of service measurements and provide the number of such requests.

(2) The public supplier shall bear the burden of proving that the service cannot technically be installed.

Force majeure.

**14.** (1) In the event of force majeure affecting quality of service, a public supplier shall provide the measured quality of service and may additionally provide a second figure which excludes the effects of the exceptional circumstances. A note clearly explaining the difference should also be provided.

(2) Where a public supplier is unable to submit a report during the relevant reporting period as a result of force majeure, he may apply to the Commission for an extension of time and the Commission shall determine whether to grant such extension.



(4) In the event of force majeure, the Commission reserves the right to exempt a public supplier from the obligation to submit a report for the reporting period in which the force majeure occurred until the subsequent reporting period.

Planned  
service  
interruptions.

**15.** (1) A public supplier shall give users advance notice of planned interruption of service by publishing the notice in the widely read electronic media and the print media at least forty-eight hours before the planned interruption of service. Such notices may additionally be sent by email or SMS and shall clearly indicate the number and types of subscribers that will be affected as well as the way they will be impacted;

(2) A public supplier shall also provide the information described in subsection (1) to the Commission at least forty-eight hours before the planned interruption of service.

Unplanned  
service  
interruptions.

**16.** In the event of an unplanned interruption of service a public supplier shall

(a) within three hours of the event, notify the Commission by email and SMS of the occurrence of the event, including details on areas affected and numbers of users affected where possible;

(b) continue to provide updates to the Commission by email or SMS every twelve hours detailing progress in resolving the issue; and

(c) within twenty-four hours of the resolution of the issue, provide to the Commission a report detailing the circumstances attributing to the interruption of the service, and the action taken to remedy the situation. Additionally, the public supplier shall indicate the number of users that were affected and in what way they were impacted. The report shall also state whether any reimbursements were or will be made to users.

### **PART III COMPLIANCE**

Compliance  
and  
enforcement.

**17.** (1) A public supplier who is providing services pursuant to section 7 at the time of these Requirements coming into force shall

- (a) start measuring quality of service parameters from the start of the second full quarter of the coming into force of these Requirements;
- (b) provide the first report after the end of the second quarter of the coming into force of these Requirements in accordance with section 8; and

(2) A public supplier who commences provision of the services pursuant to section 7 after these Requirements comes into force shall

- (a) start measuring quality of service parameters from the start of the second full quarter of commencement of provision of a service;
- (b) provide the first report after the end of the second quarter of commencement of provision of service in accordance with section 8; and

(3) All public suppliers shall start complying with the requirements of section 8 (1) from the start of the second full quarter of the coming into force of these Requirements.

(4) A public supplier who

- (a) fails to comply with these Requirements in accordance with the timelines provided in subsections (1) and (2);
- (b) fails to submit any information requested during a time period specified in these Requirements or by the Commission;
- (c) submits or publishes false or misleading information relating to quality of service;
- (d) obstructs or prevents an investigation by the Commission of the quality of service measurement, reporting or record keeping procedures;
- (e) fails to meet the quality of service targets specified; or

- (f) fails to comply with any other requirement of these Requirements;

commit an offence and is liable to the enforcement measures pursuant to sections 75 to 77 of the Act.

(5) The Commission reserves the right to verify a public supplier's measurements where it is necessary to ensure that the information provided is accurate by

- (a) ordering a general audit of the measurements / measurement framework of the public supplier on the account of the public supplier;
- (b) investigating the methods and actual process for measurements, data collection, aggregation and reporting;
- (c) the Commission conducting its own measurements;
- (d) conducting user surveys; or
- (e) any method deemed appropriate by the Commission.

(6) Without limiting the generality of subsection (4), the Commission may also take one or more of the following enforcement measures:

- (a) require the public supplier to implement a remedial plan to improve the quality of service of the relevant service or services over a period to be determined by the Commission; and
- (b) require the public supplier to publish additional information about the quality of the relevant service and, if so determined by the Commission, its implementation of the remedial plan.

Relationship  
with licenses.

**18.** The provisions of these Requirements do not replace, but rather supplements the requirements of a public supplier's license.

## SCHEDULE 1

<b>Public Fixed Telephone Service</b>		
<b>Parameter</b>	<b>Measure</b>	<b>Statistic</b>
1.0 Supply time for initial connection	Time for fastest 50%	Elapsed days (direct services only)
	Time for fastest 95%	Elapsed days (direct services only)
	Time for fastest 99%	Elapsed days (direct services only)
	% supplied by agreed date	%
	Hours for taking orders	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
	Periods for appointments	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
2.0 Fault rate	Faults/access line/year	reports per 100 lines for direct services reports per 100 lines for indirect services
3.0 Fault repair time	Time to repair 80% of faults on access lines	elapsed hours (direct services)
	Time to repair 95% of faults on access lines	elapsed hours (direct services)
	Time to repair 80% of all other faults	elapsed hours (combined figure for direct and indirect services)
	Time to repair 95% of all other faults	Elapsed hours (combined figure for direct and indirect services)
	% repaired on target date	% for direct services % for indirect services
	Hours for reporting faults	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
	Periods for appointments	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
4.0 Unsuccessful call	% for national calls	% (combined figure for direct and indirect services) Number of observations =

	% for international calls	% (combined figure for direct and indirect services) Number of observations =
5.0 Call set-up time	Mean time for national calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Time for fastest 95% for national calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Mean time for international calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Time for fastest 95% for international calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
6.0 Response times for operator services	Mean time to answer % answered within 20 seconds	.... Seconds % Number of observations =
7.0 Response time for directory enquiry services	Mean time to answer % answered within 20 seconds	.... Seconds % Number of observations =
8.0 Public pay-telephones in working order	% in full working order	% Number of observations =
9.0 Bill correctness complaints	%	%
NOTE: Where the number of observations is required, if a public supplier chooses to observe all events then just “All” should be written on this form.		

- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Clause 5 and ETSI EG 201 769 V1.1.2 (2000-10) “Speech Processing, Transmission & Quality Aspects (STQ); QoS parameter definitions and measurements; Parameters for voice telephony service required under the ONP Voice Telephony Directive 98/10/EC” Clause 5 for full definitions of the parameters used above.

- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex A for the methodology of combining weekly or monthly results to produce quarterly statistics.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex B for a full explanation of “fastest X%”.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex C for a method of calculating the number of observations required for measures of time.

## SCHEDULE 2

<b>Public Mobile Telephone Service</b>		
<b>Parameter</b>	<b>Measure</b>	<b>Statistic</b>
1.0 Supply time for initial connection	Time for fastest 50%	Elapsed days (direct services only)
	Time for fastest 95%	Elapsed days (direct services only)
	Time for fastest 99%	Elapsed days (direct services only)
	% supplied by agreed date	%
	Hours for taking orders	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
	Periods for appointments	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
2.0 Unsuccessful call	% for national calls	% (combined figure for direct and indirect services) Number of observations =
	% for international calls	% (combined figure for direct and indirect services) Number of observations =
3.0 Call set-up time	Mean time for national calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Time for fastest 95% for national calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Mean time for international calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
	Time for fastest 95% for international calls	.... Seconds (combined figure for direct and indirect services) Number of observations =
4.0 Response times for operator services	Mean time to answer % answered within 20 seconds	.... Seconds % Number of observations =
5.0 Response time	Mean time to answer	.... Seconds

for directory enquiry services	% answered within 20 seconds	% Number of observations =
6.0 Bill correctness complaints	%	%
7.0 Dropped call rate	%	% Number of observations =
8.0 Successful SMS ratio	% of successfully sent SMS	% Number of observations =
9.0 Completion rate for SMS	% of successfully sent and received SMS	% Number of observations =
10.0 End-to-end delivery time for SMS	Mean time for SMS delivery Time for fastest 95%	.... Seconds .... Seconds Number of observations =
NOTE: Where the number of observations is required, if a public supplier chooses to observe all events then just "All" should be written on this form.		



- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Clause 5, and ETSI EG 201 769 V1.1.2 (2000-10) “Speech Processing, Transmission & Quality Aspects (STQ); QoS parameter definitions and measurements; Parameters for voice telephony service required under the ONP Voice Telephony Directive 98/10/EC” Clause 5, and ETSI EG 202 057-3 V1.1.1 (2005-04) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 3: QoS parameters specific to Public Land Mobile Networks (PLMN)” Clause 6 for full definitions of the parameters used above.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex A for the methodology of combining weekly or monthly results to produce quarterly statistics.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex B for a full explanation of “fastest X%”.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex C for a method of calculating the number of observations required for measures of time.

### SCHEDULE 3

Internet Access Service		
Parameter	Measure	Statistic
1.0 Supply time for initial connection	Time for fastest 50%	Elapsed days (direct services only)
	Time for fastest 95%	Elapsed days (direct services only)
	Time for fastest 99%	Elapsed days (direct services only)
	% supplied by agreed date	%
	Hours for taking orders	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
2.0 Fault rate	Faults/access line/year	reports per 100 lines for direct services reports per 100 lines for indirect services
3.0 Fault repair time	Time to repair 80% of faults on access lines	elapsed hours (direct services)
	Time to repair 95% of faults on access lines	elapsed hours (direct services)
	Time to repair 80% of all other faults	elapsed hours (combined figure for direct and indirect services)
	Time to repair 95% of all other faults	Elapsed hours (combined figure for direct and indirect services)
	% repaired on target date	% for direct services % for indirect services
	Hours for reporting faults	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
	Periods for appointments	From .... to .... on weekdays From .... to .... on Saturdays From .... to .... on Sundays
4.0 Bill correctness complaints	%	%
5.0 Login time	Time for fastest 80%	Elapsed time
	Time for fastest 95%	Elapsed time Number of observations
6.0 Data	Rate of highest 95%	Kbit/s achieved

transmission speed achieved	Rate of lowest 5%	Kbit/s achieved Number of observations
7.0 Unsuccessful data transmission ratio	%	% Number of observations
8.0 Delay	Mean time	Seconds Number of observations
NOTE: Where the number of observations is required, if a public supplier chooses to observe all events then just “All” should be written on this form.		

- See ETSI EG 201 769 V1.1.2 (2000-10) “Speech Processing, Transmission & Quality Aspects (STQ); QoS parameter definitions and measurements; Parameters for voice telephony service required under the ONP Voice Telephony Directive 98/10/EC” Clause 5, and ETSI EG 202 057-4 “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 4: Internet access” Clause 5 for full definitions of the parameters used above.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex A for the methodology of combining weekly or monthly results to produce quarterly statistics.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex B for a full explanation of “fastest X%”.
- See ETSI EG 202 057-1 V1.3.1 (2008-07) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 1: General” Annex C for a method of calculating the number of observations required for measures of time.
- See ETSI EG 202 057-4 V1.1.1 (2005-10) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 4: Internet access” Annex B for details on Internet Access measurement set-up.
- See ETSI EG 202 057-4 V1.1.1 (2005-10) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and

measurements; Part 4: Internet access” Annex D for the specification of a test file.

- See ETSI EG 202 057-4 V1.1.1 (2005-10) “Speech Processing, Transmission and Quality Aspects (STQ); User related QoS parameter definitions and measurements; Part 4: Internet access” Annex F for guidance on technical performance aspects of Internet accesses: Delay, packet loss and jitter.

Issued by the Telecommunications Regulatory Commission this 23<sup>rd</sup> day of December, 2010.

**(Sgd.) Collin Scatliffe**

**Chairman of the Board**